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PART FOUR • FEBRUARY 1993

CU AMIGA VIDEO

TITLING P6

AMIGA Guide

THE COMPLETE GUIDE TO THE AMIGA

VIDEO SPECIAL

THE DEFINITIVE AMIGA VIDEO GUIDE

GENLOCKING P12

CHROMAKEYING P14

EDITING P20

EFFECTS P28

DESKTOP VIDEO ON THE AMIGA EXPLORED & EXPLAINED

NUMBER FOUR

FREE!

EXCLUSIVE TO CU AMIGA MAGAZINE!
PART FOUR OF THE MOST COMPREHENSIVE GUIDE TO THE AMIGA EVER PUBLISHED.

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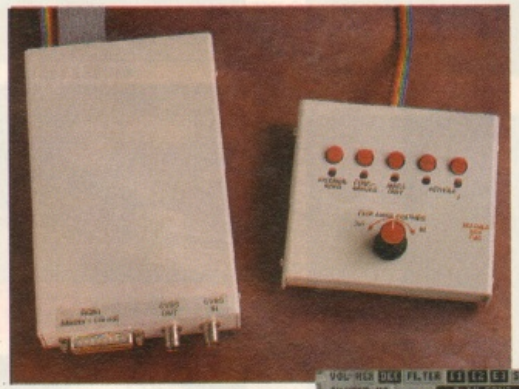
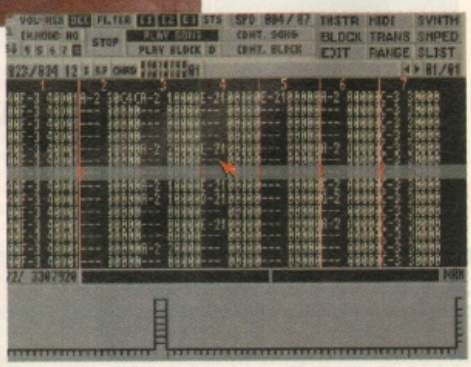
Adding spinning logos to your own video production doesn't even require any extra hardware.



Find out how a genlock like this can change the way your home videos look forever. We will show you all the tricks and tips that will make your films stand out from the rest.

Adding sound to your video is an aspect of production that is all too often virtually ignored by books and magazines, but not the CU video supplement, as we give you all the information necessary to give your video an extra dimension.



If you want to knock that terrible Christmas video into shape or you are planning to release Alien^3 – the director's cut, then you need help and you need it fast. Ever on hand with helpful advice, the Amiga Guide sorts out DTV.

Editorial

Welcome to this, the fourth in our series of Amiga Guides, presented free with the February issue of CU Amiga. In the past few issues and over the coming months, the Amiga Guide will build up to cover every aspect of the Amiga imaginable, from graphics to games, programming to public domain and music to something else beginning with 'm'. Each free issue of the Amiga Guide will eventually form part of the most complete guide for the Amiga ever published, so if you have missed out on any of the previous issues you may want to give the back issue department a call.

Last month was a special issue for beginners who are trying to get to grips with their new machine, or have updated to a newer version of Workbench. This month we are jumping forward a bit to explore the amazing world of desktop video (or DTV) which has for a long time been the key area for the Amiga in terms of professional use.

You can actually use your Amiga to create titles on a normal home video recorder with no extra hardware (bar a few connecting leads) required, so everyone with an Amiga and a VCR can get involved.

Of course, if you want to create entirely original productions you will need a camera, so check out our Camcorder buyers guide which will give you a breakdown of what features you can expect to get and what prices you should pay for currently available models.

Then we're off to the exciting land of genlocks and chromakey units, which are responsible for about 80 percent of the visual and special effects that you see every day on the T.V. If you ever wanted to present the weather or read the news, this is your big chance.

We will also touch on sound recording and editing, an area not often covered, even in the dedicated DTV press. Of course, to cover this subject properly would require another supplement, but at least we'll give you an idea of what you are up against.

Of course, it all comes to nothing if you can't edit everything together and produce a watchable video at the end of it all, so check out the hints and tips that will keep you straying from the path of sanity.

I hope you will find this guide as informative and entertaining as the last three, and be sure to write and tell us if you think there is any aspect of the Amiga which you think could use its own guide.

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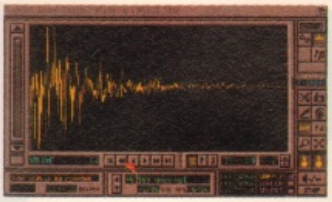
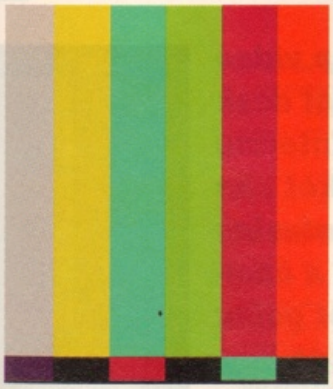
Yeah, I'll have DTV with SVHS component, LANC and vertical take off erase heads. But what does it all mean?





As well as showing you how to use your equipment, don't miss our buyer's guide which will show you what to buy and what to pay if you are thinking of increasing your desktop video power.

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This issue of the Amiga guide is free with the February '93 issue of CU Amiga, and must not be sold seperately even if you do really need the money.

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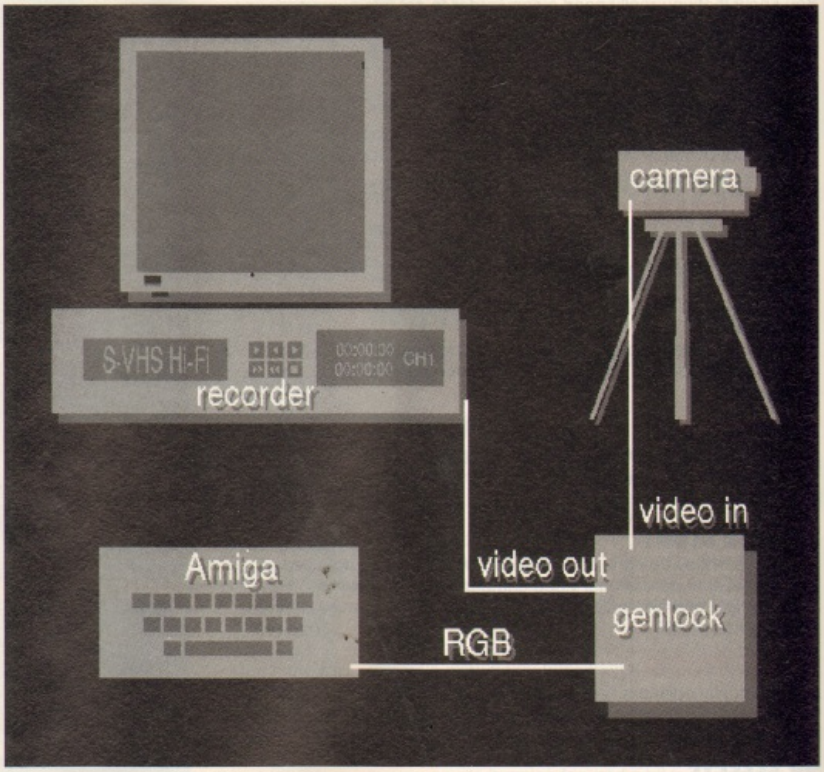
INTRO

What is desktop video and what sort of desk do you need? Entering the video market can be even more confusing than choosing a computer. We're not going to tell you what to buy, but help you understand the difference between what you might buy.



A typical small studio set-up. Although it would be nice to have an SVHS deck to master your tapes on (or even something a bit more expensive) you can still manage a quite acceptable setup with anything you find lying under your television.

What is the difference between desktop video and ordinary video then? Well, desktop video obviously takes place on some sort of desk doesn't it? Well, no. In fact there is no real difference at all, video people just use DTV to describe a more computer oriented way of putting video together.

Everything that you can use your computer for in the production of videos is quite easy to do without a computer – you just use another dedicated box of electronics for the task. However, putting this the other way around it is easy to deduce that instead of buying lots of dedicated boxes you can replace them all with a computer.

The Amiga has proven itself to be particularly useful for video work, both with amateurs and in professional studios. It comes with more than adequate colour and screen resolutions for titling, it can produce a full overscanned video image, it supports interlace mode which is required for stable high quality video images and it is easily expanded with video hardware such as genlocks and chromakey units.

SETTING A STANDARD

Okay, so you've got the right computer, now all you need to do is go out and buy a camcorder and Ridley Scott had better be off down the job market. Unfortunately it is not quite as simple as that.

All camcorders are not the same. Despite what features they might have in the way of auto-focus zoom lenses, stereo microphones and stop frame capabilities, they all record to tape at some point.

The standards used are far from being just the same thing in a different box, so we'll now go through them in order of ascending quality.

VHS is probably the best known format. It has been around for more than 10 years and for

INTRO INTRO

Choosing the right format is the first important decision you will have to make.

about the last six years it has been the industry standard for home recorders. Unfortunately that doesn't mean it is any good. It's resolution is around 210 lines. If you have ever tried freeze-framing a VHS tape at an action packed part of a film you will undoubtably have come across the strange jerky motion as two halves of the image on alternate lines (the 'fields') seem to be out of sequence.
When the rush was on to create a format for domestic use, a lot of corners were cut. Whilst VHS might be alright for taping Eastenders on whilst you're out, it's hardly worthwhile trying to remake Bladerunner with it.

VHS-C is essentially the same specification as VHS, but in a smaller cassette for camcorder use. It is slightly better quality though, mainly because the head technology had advanced a bit by the time VHS-C came out.

VHS-HQ Later domestic recorders included some extra image enhancement circuitry. It does give slightly better quality, especially in a reduction of colour bleeding, but it's a long way from pleasant to look at.

8mm This format is another popular one for camcorders. A slightly higher 260-280 lines of resolution give a better picture, and this format really took off because it was possible to produce much lighter recorders for it. Also, 8mm cameras were the first to feature flying erase heads (as explained later in this issue) and used metal tape.

SVHS-C The second wave of camcorders used a new system of splitting the video signal into two parts. Instead of encoding all the information into one channel with the inherent losses involved (this is why composite is all noisy and blurred) a Super VHS camera separates the signal into Chromanance (colour) and Luminance (brightness) channels. Together these are known as a Y/C signal. Added to this a much higher resolution of over 400 lines gives greater picture quality which is especially noticeable in slow motion and freeze frame operations.

SVHS-C is completely incompatible with normal VHS and VHS-C, although SVHS equipment is capable of recording on ordinary VHS tapes and SVHS tapes can be recorded on in VHS mode and then used in VHS equipment.

SVHS is the full sized version of SVHS-C. It gives slightly better results, mainly because the recording heads are larger.

Hi8 is to 8mm what SVHS is to VHS. Hi8 is a high band system, giving a slightly greater resolution than SVHS and also uses a component (Y/C) output. The high bandwidth and properties of the metal tape also give it superiority over SVHS, though it can probably only survive the same number of generations.
Above this level you are really out of amateur status and into the ranks of professional equipment, including near-broadcast quality U-matic recorders, one inch decks, and digital systems like D2.

Unless you are jolly rich you probably won't be interested in any of this stuff, and the really sad thing is that generally, the more expensive it is, the faster it is going out of date.
If you already have a video deck that you were hoping to record on, and it's only a nasty old VHS deck don't worry too much. It's most likely that you are going to want to dub down to a VHS deck at some stage anyway. As long as it has flying erase heads (see the editing section) you should be alright.

That doesn't mean that you can't mix and match the rest of your equipment though. If you have a Hi8 camera you can always dub across to an SVHS deck, etc.

Remember that a lot of high street stores hire out decks too.You may be able to hire out a deck 'on approval' for thirty days (a nice SVHS one with jog-shuttle etc.), make your final edit on it, produce a master and dub down to your standard VHS deck to run off a few copies before taking it back.

THE SET-UP

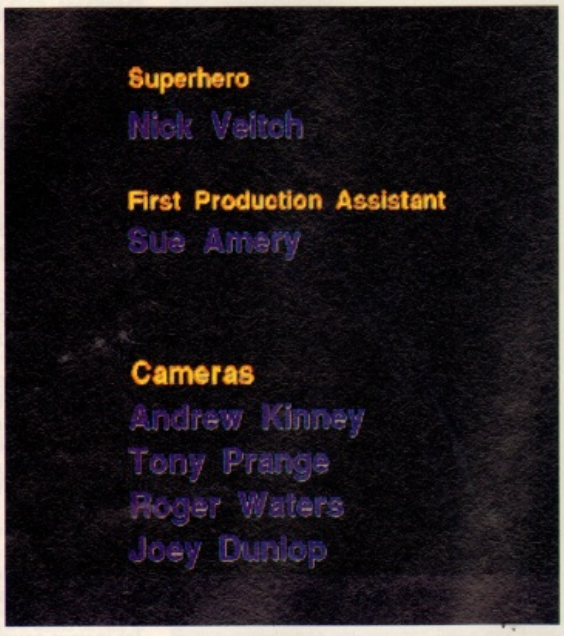
So what do you actually need for a DTV set-up. Well, it depends on what you want to do. The minimum set-up is really a master deck, Amiga, genlock and a camcorder. The camcorder can double as a player for any off-line effects or titling you wish to do.

Progressing up the first thing to do is usually to get a better genlock. Cheap genlocks often have difficulty locking on to the signal from a VTR, they are designed to be used on live video coming from a camcorder. Also, the better ones will usually have faders, mixers and perhaps even a wipe control, which can be particularly useful.

If you are careful you can build up a very good system in stages, without having to buy a whole load of equipment which later becomes useless to you. Over the next 30 or so pages we will be showing what to look for in your equipment as well as how you can use it.

Selecting the right camera may be as important as having bought the right computer.

TITLING



Remember to antialias your fonts to prevent jaggies occurring, which are more noticeable when overlaid onto video images.

Most custom video titling gizmos consist of a character generator and a genlock. They can be very expensive and ultimately they are all far less flexible than the most humble of home computers.

For many people the initial foray into the terribly complicated world of Desktop Video is titling. It's cheap, it's easy, and you don't actually need any extra equipment.

You don't need a genlock to have a go at titling. In fact, if you own a copy of *DPaint* you are ready to go almost straight away. When you think about it, most titling is done at the beginning or end of a film anyway, so you don't actually need to overlay graphics.

Most video recorders have a composite input so you can just connect up your composite out from the Amiga and off you go.

KEEP IT LEGAL

Because of the way images are encoded onto tape, there is a slightly foreshortened range of colours that can be recorded by it.

This means that what passes for white in video land, is actually a light shade of grey in the Amiga world (about 13:13:133 on the RGB scale). Because of the bandwidth used by the tape, any colours 'brighter' than this will cause problems and are known as 'illegal' or 'false' colours.

The effect of using these colours is not always disastrous. White is the worst offender, but anything with an RGB value of over 13 can be problematic. Usually the audio track suffers badly, with a high pitched whine creeping in, but occasionally glitches or field wobbling may occur.

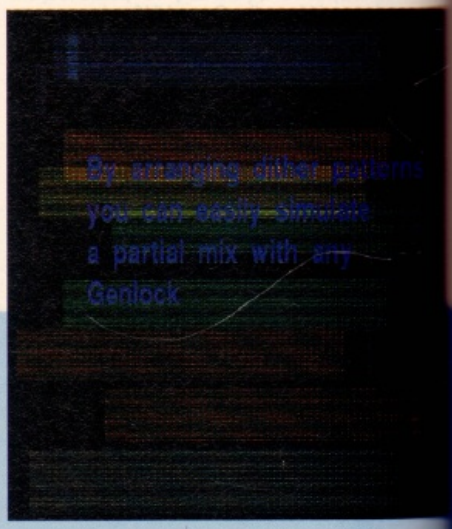
The only thing you can do really is to make sure you keep the colours low. An image processor like *Art Department* will allow you to adjust the dynamic range of an image, but it could be tedious treating every frame of an animation in this way.

SCROLLING

There are a number of dedicated scrolling packages for use with credits and tiles, but you can just create an animation in *DPaint* if you like. It may not be as smooth, but it'll be acceptable. The jagged effects of bitmapped fonts are accentuated when using a genlock over a piece of higher resolution video.

Antialiasing the fonts makes some difference, but remember that the software doesn't know exactly what the background is going to be.You can do this in *DPaint* too.

It is a good idea to do a dry run first, to make sure that the text appears in the correct place and that the fonts are legible and stand out enough from the background. Outlining a piece of text in a dark or bright colour can make all the difference.



Partial mixes can be created by using fill patterns in*DPaint* which include some transparent colour. This effect has actually been used in many pop videos.

TITLING

CREATING YOUR OWN LOGO

Few things look as professional as a good company logo. Any large corporation worth its salt will have spent millions on market research, and paid a talented design team thousands to come up with the ultimate expression of dependability, trust and timelessness.

Alternatively, they may have mucked around on an Amiga with a Ray Tracing package.

RAY TRACING

An image rendering program such as *Imagine* can create a photorealistic picture of something that exists only in your head. The hard part is usually getting the raw information into the package, but once there you can experiment with different textures and colours until it's just right.

As an example, let's create a logo for CU Amiga, to go at the start of the (hypothetical) new range of cookery videos presented by our well known master chef, Nick "I'll never get that curry stain off" Veitch.

The logo is to be a traditional shiny chrome sixty foot high logo, resting on a chequered floor –nothing too original. The chrome letters are to reflect blue sky and clouds, and the entire image is to be ray traced at a high resolution to look as realistic as possible (or as realistic as sixty foot chromium letters or a giant kitchen floor can look.)

Step 1

Draw out the logo in a traditional 2D paint program such as Deluxe Paint. When using text, use scalable fonts to avoid jaggies. Use a high resolution interlaced screen of two colours to pack in as much detail as possible. Save the image as an IFF.

Step 2

From within *Imagine*, load the IFF and transform it into a solid. An option in the Object Editor will perform this automatically. Extrude it slightly for a bit of depth.

Step 3

Get into the attributes menu and make the object 'chromey'. The Imagine manual doesn't want to tell you how to do this (as it doesn't want to be a manual at heart really) but it simply involves making it black and very, very reflective.

Step 4

Create the floor. I used a large disk, covered with the slightly reflective texture 'checks'.

Step 5

Load both objects into the Stage Editor, and position the camera for best effect. Remember to select 'Camera View' or you'll get a surprise when you render the image.

Step 6

Add some light sources. I used two – one for a main light, and one for a subtle fill. You probably can't tell from the finished picture!

Step 7

From the action menu, select the global requester. In the 'global brush' area, enter the name of your favourite sky picture you have. As this picture will only be seen reflected in the letters, you can get away with creating one yourself in *DPaint*. Simply choose a blue background and airbrush some white fluffy blobs onto it.

Step 8

Add a graduated sky, some stars and adjust the light sources to add shadows if necessary.

Step 9

From the Project Menu, try a few small quarter screen scan line renders to check everything out.

Step 10

Select a high resolution interlaced 24-bit image, choose ray trace mode and go to bed. Twelve hours later you will wake up to a beautiful new logo.

Step 11 - optional

Animate the logo by getting the letters to whizz on-screen, or the camera to track around and around. When the image is moving, there is no need to go the extremes of ray tracing the image – scan line will suffice perfectly well.

You may have to process your colours prior to recording to keep them legal.

Obviously, to use 24-bit images you will need a 24-bit card and the appropriate lead or encoder to enable you to connect it to your VCR. HAM images can look pretty good though, particularly if you are only going to use VHS.

ALL ABOUT CAMCO

Combined with the right software and hardware, an Amiga can become the centre of a powerful video system. But unless you're happy to source all your video images from TV or pre-recorded tapes, you also need a way to create your own video images, and this is where the camcorder comes in.

You can make a start in video production with a CCTV (closed-circuit television) type video camera. Though relatively inexpensive at around ú100, these cameras normally offer only a black-and-white image, and rely on mains power.

For colour video recordings on the move, you need the most popular fashion accessory of the techno-set – a camcorder.

Combining a video camera and a videotape recorder – hence the name – camcorders are now the fastest-growing area of consumer electronics, with around 600,000 units sold in the UK alone last year. The manufacturers estimate that one million will be bought in 1993, and that still leaves an enormous potential market, especially among owners of computers and VCRs.

But how much do you have to spend on a camcorder, which do you choose and what can they do for you? All modern camcorders have roughly the same basic features. A series of optical lenses focuses light on a CCD chip made up of many thousands of pixels which convert the light into an electronic signal.

A built-in microphone converts sound into another signal, and both sound and picture signal are recorded on a video cassette tape, which can be replayed in the camcorder, or in another video machine linked to a TV or monitor.

The camcorder is powered by a rechargeable Nicad battery, or via an adaptor from mains power. A Nicad battery will normally give you around 30 minutes recording before it needs recharging, so it's wise to have some spares.

A small built-in TV monitor, either a mono CRT or a colour LED, allows you to check the recording, and the camcorder will have a variable focal length lens, allowing you to zoom in and out on the subject.

You can also expect to find manual and automatic zoom and focusing controls, transport buttons to shuttle through the tape, and features such as a picture fader, and backlight compensation to adjust the exposure for silhouetted subjects.

When you're choosing a camcorder, the first task is to decide how much you want to spend - new models cost from ú400 to ú2000, and it's not wise to buy second-hand since repairs out of guarantee can be horrendously expensive. It is wise, though, to look in the shops for previous years' models rather than brand-new machines – that way you'll save hundreds of pounds on end-of-line machines, and still get a full guarantee.

Your next step is to decide which format you need (see the Formats Guide for the pros and cons of each format). Then it's a matter of shopping around for a good price – dealers are often willing to throw in a few tapes, a spare battery, even an equipment bag or a tripod to secure a sale.

USEFUL FEATURES

A few camcorder features are particularly useful if you intend to capture video images and transfer them to your Amiga, perhaps through a digitiser or genlock.

Zoom range is important for capturing distant objects; a 6x zoom is pretty weedy, 8x is standard, and 10x is more like it. Digital zooms can offer up to 64x, but they do this by enlarging a small central portion of the video image, so picture quality drops drastically.

Manual zoom and focus are important for precise control of recordings – autofocus and powered zoom are OK for point-and-shoot family videomakers, but serious camcorder users need more hands-on control.

Fast shutter speeds are crucial if you want to capture steady still images of fast-moving objects such as sporting events.

Stereo sound is handy if you have a stereo sound sampler for your Amiga, and want to record sound effects together with your video images.

Finally, an infra-red remote control takes a lot of the hassle out of shuttling through your 8mm tapes – VHS-based camcorders don't really need a remote control, because it's assumed you will be replaying the tapes in a VHS VCR.

Just combine a camcorder and an Amiga, and there's no limit to the video wizardry you can enjoy.

CAMCORDERS

RDERS

This Panasonic model features a digital 16x zoom, complementing the 8x optical zoom, but unfortunately it's automatic only, there is no manual option.

RECOMMENDED BUYS

Chinon VC1600 – £399

Available only through Dixons and Currys, this is the cheapest new camcorder on the market.

It's a VHS-C model with a mono viewfinder, mono sound, an 8 times zoom lens, and both manual and auto zoom and focus. Performance isn't brilliant, but there's a selection of fast shutter speeds, dual-speed recording and a date/time display. Oddly, it isn't supplied with a VHS cassette adaptor.

Amstrad VMC8 – £499

One of the cheapest 8mm camcorders, the VMC8 has an 8x auto/manual zoom lens with a macro feature which allows you to focus very close on small objects.Sound is mono, and the viewfinder is black-and-white. Other features include a 32-character title superimposer and a single fast shutter speed. Picture performance is good considering the price.

Canon E230 – £499

This discontinued 8mm model is still available in some shops at attractive prices — shop around for bargains. Excellent features include a 10x auto/manual zoom lens, auto/manual focus, a rotating 'flexigrip' for easy shooting from low or high angles, six fast shutter speeds, automatic interval recording timer, caption generator and infra-red remote control. Sound is mono, and the viewfinder is black-and-white.

Hitachi VM-E31 – £649

An inexpensive 8mm 'palmcorder', small enough to be operated with one hand. The E31 manages to pack in loads of good features including auto/manual focus and 8x zoom, six fast shutter speeds, fader, character generator, and digital signal processing to give excellent response to changing light conditions.

JVC GL505 – £799

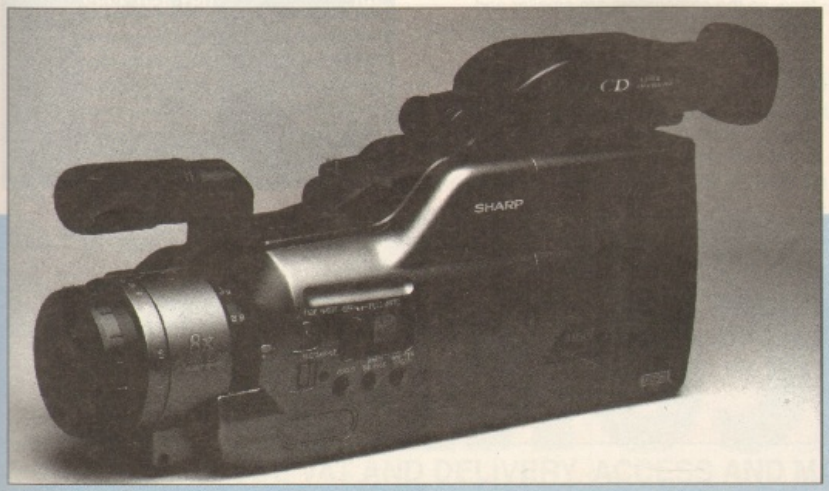
A reasonably inexpensive entry into SVHS. An eight times zoom, fader, several shutter speeds and superb quality stereo boom mike make this a medium-weight performer. The 'animation' facility allows reasonably impressive animations of about four frames per second to be made very easily.

Sharp VL-C8000 – £700

The cheapest camcorder to feature a colour LCD viewfinder, this VHS-C model also boasts 12x auto/manual zoom, fader, five fast shutter speeds, and good editing facilities. Colour LCD monitors are a mixed blessing; colour rendition is usually good, but the image is grainy and tends to blur when you move the camcorder.

Panasonic NV-S7 – £1000

The S7 is expensive for a palmcorder, but it does offer excellent S-VHS-C picture quality, hi-fi stereo sound, and other advanced features. These include a 16x digital zoom in addition to the 8x optical zoom, a socket or an additional external microphone, six fast shutter speeds, VITC timecode, digital image stabiliser, and other effects. Unfortunately there's no manual zoom (power zoom only), and manual focusing uses tiny buttons rather than a lever.



This is the cheapest model to feature an LCD colour viewfinder. Whilst the colours are rendered well, the resolution isn't amazing.

The Canon E230 8mm camera offers excellent features for a rather low price. It has been discontinued but is still available in many stores.

Sony TR-805 – £1100

This amazing new Hi8 palmcorder features an image stabilisation system which irons out small movements by the user. Other goodies include stereo sound, 10x power zoom, auto focus, manual over-rides for focus, colour balance and exposure, and RCTC, a form of video timecoding useful in the editing process.

Acronymics

BLC – Back Light Compensation, a video signal boost feature used by camcorders to correctly expose objects silhouetted against background light

CCD – Charge Coupled Delay, the form of microprocessor used by the light-sensor of a camcorder

CRT – Cathode ray tube, the picture display used in most TVs and in mono viewfinder camcorders

LCD – Liquid Crystal Display, the form of colour viewfinder used in some camcorders

NICAD – Nickel-Cadmium, the formulation used in most rechargeable camcorder batteries.

NTSC – National Television Standards Committee, the 525-lines picture-scanning system used in American video systems. Also scathingly known as 'Never The Same Colour'.

PAL – Phased Alternate Line, the picture-scanning system used in UK video and television equipment.

RCTC – Rewriteable Consumer Time Code, used by Sony and others, a digital frame-numbering system used by some camcorders which allows frame-accurate video editing using a compatible edit controller unit.

VCR – Video Cassette Recorder, like the VHS models usually used in the home .

VHS – Vertical Helical Scanning, the recording method used in the domestic VCR and some camcorders

VITC – Vertical Interval Time Code, a system similar to Sony's RCTC, but used by Panasonic and others.

FORMATS

All UK camcorders use the PAL video system, compatible with standard TVs and VCRs. PAL creates a picture from 625 horizontal scan lines, so all camcorders offer this horizontal resolution. However, different camcorder formats offer different numbers of vertical lines, and this makes a great deal of difference to the quality of the final picture.

The original video format is VHS, as used in most domestic VCRs. This offers vertical resolution of around 230-250 lines. The problem with VHS camcorders is that they're big and bulky – perhaps that's why they're still popular in America, where they like everything big!

An alternative is VHS-C (Compact VHS), which has the same resolution as VHS and uses the same form of tape, but in a miniaturised cassette. This slips into an adaptor for replay on a domestic VCR. Though smaller and lighter than VHS camcorders, VHS-C camcorders are limited by the 45-minute maximum length of tapes (90 minutes in Long Play mode).

Each of these two formats has a 'high-band' version giving 380-400 lines of vertical resolution. S-(Super)VHS and S-VHS-C camcorders cost more, and S-video recordings cannot be played on conventional VHS VCRs.

The alternative to VHS-C is 8mm, also known as Video 8. This uses a smaller 8mm tape, so the camcorders are smaller and lighter than VHS-C. They also give slightly better picture quality (around 240-260 lines), better sound, and longer tape playing times of up to 120 minutes. The problem is that an 8mm tape cannot be played on a VHS VCR – unless you buy a special 8mm VCR, you have to connect cables from the back of your 8mm camcorder to your VHS VCR or your TV to play back the pictures.

The more expensive high-band version of 8mm is Hi8, which gives comparable picture and sound quality to S-VHS. Again, Hi8 recordings cannot be played on standard 8mm machines.

While high-band camcorders can be connected to standard VCRs and other equipment, you will not get the full high-band picture quality unless you have a complete high-band (or 'S-video') set-up; perhaps including an S-video compatible genlock for your Amiga, an S-VHS VCR, and an S-video or RGB-compatible TV or monitor. Total cost would be around £3000.

CONTACTS

If you are not experienced in video equipment it is probably a good idea to go to an authorised dealer and explain just what it is you want from a camera (it may be an idea to take this supplement along too). Here is a brief list of numbers for the major distributors and manufacturers who should be able to give you advice.

SONY	0784 61688
PHILIPS	081 689 2166
JVC	081 450 3282
PANASONIC	0344 853943
TECHNO	081 898 9934
CANON	081 459 1266
AMSTRAD	0277 228888
HITACHI	081 848 8787

CAMCORDERS

Marcam LIMITED

THE GENLOCK PEOPLE

Do you want to overlay computer graphics or titles onto your videos? If so, you will need a Genlock. Rendale Genlocks are built to a very high standard, and are used widely in the professional environment.

**62 Tenter Road,
Moulton Park
Business Centre,
Northampton,
NN3 1AX,
England.
Tel: (0604) 790466
Fax: (0604) 647403**

RENDALE 8802 £139 –

The Rendale range of Amiga Genlocks begins with the 8802. This is a Genlock, which, when attached to an Amiga computer and a suitable video system, will allow you to mix video and computer graphics. It offers all the functions that you need, such as:

* RGB feed through, allowing for a preview monitor.
* High quality output video, which in default mode provides video with overlaid computer graphics.

RENDALE 8802 FMC £178 –

It can be supplied with a device which will allow you to fade between computer graphics and the video source, and also a mode control unit so that you can move between Amiga only, video only, background mode and keyhole modes 1 & 2.

RENDALE SUPER-8802 £499 –

The Rendale Super-8802 is a development of the basic 8802 unit, it performs the same functions, but has the added capability of also working with Super-VHS signals. The unit will allow the user to cross fade between the Amiga and video signal. In addition, some basic wipe patterns are provided, and also a fade to black option. Mode control is also provided via hardware.

NEW! RENDALE FMC £45–fitted

8802 FMC Unit

This is a brand new piece of kit which will improve the capabilities of the popular Rendale 8802 Genlock. This unit allows you to cross fade between the Amiga and video signals, so that you can gently fade computer titles in and out. Also, the ability to switch between the various modes offered by the 8802 is provided. The required mode is selected by a push switch, giving smooth, flicker free transformations.

The FMC unit does need to be soldered into the 8802, we can do this at our factory if required.

8802 UPGRADES £45 – £400 –

UPGRADE PATHS

Rendale Genlocks are designed to be flexible, and the ability of your Genlock to grow with your system was deemed to be of paramount importance in our design process.

As a consequence, existing 8802 users can follow one of two upgrade paths. The fade and mode control unit (FMC unit) can be purchased independently, and fitted to your 8802 genlock by our engineer. We would only require your unit for around two days.

The other upgrade path is the move from a purely composite 8802 to the Super-8802. This can also be done simply, although we do have to perform the upgrade work at our factory. We would only require your unit for around two days.

PRICES INCLUDE VAT AND DELIVERY. ACCESS AND MASTERCARD ACCEPTED.

GENLOCKING

Colour bars are useful for checking that all your equipment is working and giving out the correct level of signal.

The genlock has done for DTV what the laser printer has done for DTP. For under a hundred quid, you can produces your own Chart Show. Genlocking is one of those very basic concepts that become surrounded in mystery.

Put simply, a genlock will permit Amiga graphics to overlay a video signal. For example, with a genlock will allow you to draw a funny moustache on a live video image. What it won't do is to allow a computer image to sit behind a live video signal.

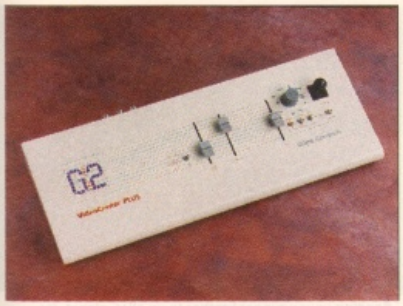
What the color bars should look like if you have a 'blue only' switch on your monitor. OR, if you use the nifty trick described in the accompanying 'barsdoc'
Note: the pic you're looking at now is for demo purposes only: the pallette values are not useable - it's just to show how the bars all look the same, with the 100% white being a bit hotter.

There are many colour bar test patterns and pattern generators in the public domain. Check out your local library or take a look at some of the ads in CU Amiga.

Here is the news – the picture graphic appears to be in the background.

Subtitles can be made less obtrusive by a mix of 70%.

More advanced units can provide wipe effects for selective genlocking.



HOW IT WORKS

The genlock must somehow mix two signals, one from the Amiga and one from a camcorder or video tape deck. In principle this should be easy, in practice it's not. Although the two signals are the same – fifty frames a second of video information – their timing signals are slightly adrift. As the timing of the live signal cannot be changed, the Amiga must be altered - the genlock will actually speed up or slow down the Amiga until it is 'locked' to the live video.

This is why you should never format a disk or perform other time critical operations with a genlock in place – you can't be sure of the accuracy of the internal chips. If you format a disk whilst watching Neighbours through a genlock, you might have to watch Neighbours everytime you use the disk in the future.

ANY COLOUR YOU LIKE

A genlock always keys on one colour at a time, in other words it replaces one particular occurance of a colour with the live signal. Usually this colour is colour 0, so any part of the Amiga image made up from colour 0 is effectively transparent.

Thus to provide subtitles to a video, you would create an Amiga display totally filled with colour 0, except for the words. The colour 0 disappears and the live video shows through, with the text superimposed on top.

Exactly the same technique is used to provide those 'over the shoulder' monitor views that you see on The Nine O'Clock News. If the newsreader shifts over the right too much, you can see that the image is planted over the top and not actually projected behind them as first appears.

CREDITS

One of the most obvious use of a genlock is to add credits to your video. You know the sort of thing: "Produced by CU Amiga, Written by CU Amiga, Starring CU Amiga" and so on. With the right software these credits can even scroll up the page just like on the telly (see the section on Titling for more information.)

You might think that a genlock isn't really necessary for some credits, as the Amiga output can be recorded directly to tape. This is true, but most genlocks provide fading facilities which will add a touch of professionalism.

FADE TO GREY

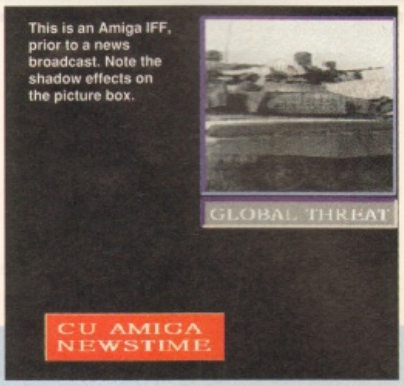
Any but the simplest genlock will have some knobs and buttons. At the very least, there must be a way of selecting Amiga graphics only, live video only or a mixture of the two. The ability to fade both or either in or out is advantagous, as is being able to fade the entire image to black when it's over.

Some top-of-the-range genlocks also provide various 'wipe' effects, so you can choose the method by which the video and computer images appear. The G2 V2 genlock even has a little joystick to accurately position the wipe effect which can add a whole new range of special effects.

GOING LIVE

It should be pointed out that genlocks work best when used for video coming live from a camera. Images which have been taped are prone to suffer tearing at the top of the screen. This effect is also noticeable with some of the lower priced units. The Rendale 8802 and the G2 systems both worked perfectly with live signals, and very close to perfectly with taped images.

The moral is to use a genlock with live video whenever possible. Obviously this is not always feasable – outside broadcasts for example, and in these cases the quality of your recording equipment will soon become apparent.



This is an Amiga IFF, prior to a news broadcast. Note the shadow effects on the picture box.

THINGS TO DO WHEN BUYING A GENLOCK

Unfortunately, the only way to really check that a genlock device is behaving properly is by pluging it in, cranking up some test bars and sticking the output through a vectorscope. There are a few tell-tale signs though.

• Try to avoid models which plug directly into the Amiga instead of being connected via a cable. Not only does this not allow you more scope in positioning the unit, it also means that with all likelihood the connector is soldered straight to the board inside. This means one day you are going to drop something on it, or wriggle it a bit too vigorously when getting it out, and the whole board will crack

• If you are in a shop, ask to see it working. They may not have facilities to test it much, but at least you'll be able to see if it exhibits any adverse fringing effects.

• Try and video the results of your testing, then watch the playback. There will always be a drop in quality, but many things that a stout monitor will shrug off (like a badly synching signal) will throw the tape way out.

• Try to genlock over an incoming video signal. Admittedly this depends on the quality of the output from the video deck, but it will also show you how good the genlock is at coping with substandard signals (as most video outputs are). Tell-tale signs to watch out for are screen-tears at the top where the interlaced images separate from each other.

GENLOCKING

KEYING

When you start to use a device like the RocTec Chromakey, you know that the professional studios better look out. Remember what you can't do with a genlock? You can do it with a Chromakey.

Sending your younger brother to an alien planet, far away, is now possible on an Amiga near you...

With a bit of imagination, a paint program and a very stupid person to stand in front of the camera, you can create some excellent effects with a chromakey unit.

Video keying like this is a whole new ball-game. A genlock will superimpose computer graphics onto live video, but doing things the other way round is a major achievement. The fact that you can do it for less tha3n 300 is closer to being a miracle, especially when your realise just what it is that you can do.

IT'S A MIRACLE

Ok, you have a wonderfully rendered ray-traced image of an alien planet on your Amiga, and what you want is to add your brother to it so it looks as though he's actually there — it's impossible, right? Wrong.

A keying device which can achieve this has a lot of work to do. First of all it must synchronise the video signals, just like a genlock. Then it must examine the live video – not the Amiga signal mind — and remove an occurrence of a particular colour. This is then merged with the Amiga video to produce some amazing results. Back in the old days it used to be called CSO – Colour Separation Overlay – but now it's Chromakeying, presumably because

The trick lies in the removal of a single colour from the live video. For example, the BBC plonk Bill Giles down in front of a bright blue screen. Their chromakey removes this blue part of the video and replaces it with a computer generated weather map. As you can see, here at CU Amiga towers we have achieved exactly the same thing.

There are more exciting pictures to produce than weather maps. Any Amiga image can appear in the background, including animations. For the amateur science fiction director, a Chromakey is the tool which will make all the difference.

CATCHES

There are several catches to the Chromakey process. The first is that you also need a decent genlock – we used the RocTec device with the G2 genlock for some amazing results.

The other catch is a little more tricky. Because the chromakey replaces one colour, it can be a little difficult to use in a non-studio setup. The background colour must be uniform and very evenly lit. Any discrepancies and the computer graphics won't show through.

Worse still, any unwanted occurrences of the key colour will be rendering transparent. Therefore if Bill Giles were to wear a blue T-Shirt, his entire upper torso would become invisible — an effect which although stunning is hardly useful for weather forecasts.

LOOK UP IN THE SKY!

When chromakeying proves difficult, the alter-

CHROMAKEYING

With a wipe unit on the genlock, you can selectively key areas of the screen.

Some bizarre effects are possible. Here some hapless tramp is sucked into an A500's Workbench. Chromakeying over applications could be very useful for tutorial videos.

If you digitize suitable backdrops, you should be able to make a complete movie masterpiece without ever leaving the studio, as seen here in a clip from 'Electra Glide in Green'.

native process of lumakeying can come to the rescue. Instead of using a key colour ('Chroma') the keying process can use a threshold brightness ('Luma') and replace any part of the image which exceeds a certain light level.

The most obvious example of a bright uniform background is the daytime sky. Anything standing against the sky can be made to appear against the computer background. Lumakeying is easier to control than Chromakeying, but is better suited to outdoor work as it is slightly less flexible when a good studio is available.

Problems with both forms of keying can occur when the position of the camera changes – whether by accident or design. As the background comes from the computer, it does not move and the overall effect can be unsettling. For example, if a mountainous alien landscape is added to an ordinary suburban setting, and the camera is hand held rather than mounted on a tripod, the shaking effect will cause the entire computer generated sky to separate from the live video totally spoiling the effect.

The only possible way to counter this effect is to create a computer animation of the background which totally matches the view expected when the camera moves. This sort of effect is beyond the scope of most rational beings.

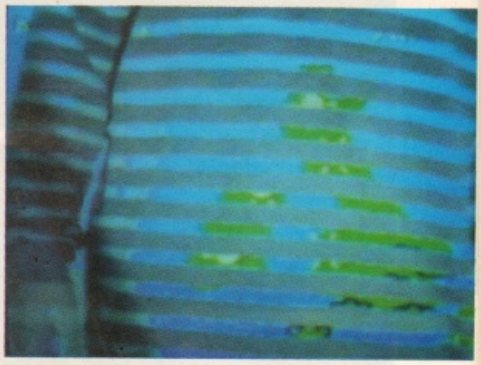
The RocTec device offers both Chroma and Luma keying, and also doubles (triples?) up as an RGB splitter for digitisers in its spare time.

Various special effects are possible, allowing some normal genlocking to occur at the same time as keying — very strange and wonderful footage can result in messing with the buttons.

EFFECTS

Essentially, a chromakey unit allows you to produce an incredible range of effects. Virtually all those nasty things they used to do to people on top of the pops can now be done on your Amiga. If you use the RocKey in conjunction with a genlock which has wipe facilities you can even selectively key areas of the video image.

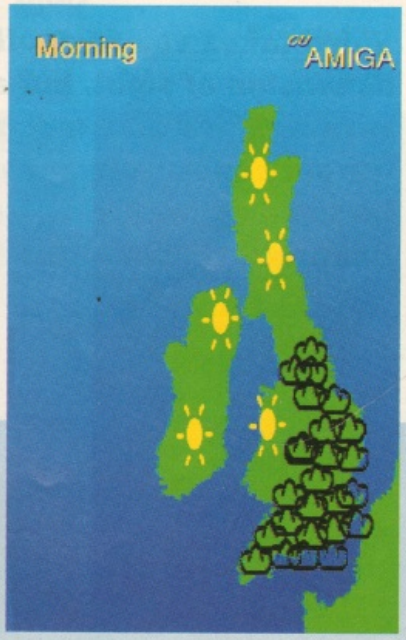
For more foolishness, see the guide on simple effects on page 28 of this supplement.



When it comes to keying, stripey colored jumpers are out. Also check for highlisghts and shadowa when lumakeying.

Okay, so the BBC have got better maps, but it's amazing what you can knock up in *DPaint*'s HAM mode.

The sequence was stored as frames in an anim file, then simply called up when required by the 'vision controller'.



The only thing you are without is a small, left-handed person who knows how to find Fishbourne without a map.

SOUND

Many home recorders have the capability of recording HiFi quality soundtracks on ordinary VHS tape.

Video takes you to another dimension. Its a dimension of sight, but as Rod Serling knows very well, it's also a dimension of sound. It's very easy to take sound for granted, but in fact adding realistic sound to your video productions can be one of the hardest things to master.

If most of your real video footage is going to be supplied by a camcorder then it will almost always be accompanied by a soundtrack recorded at source. It is very difficult these days to find a camcorder without some form of built-in microphone, and many of them are very good indeed.

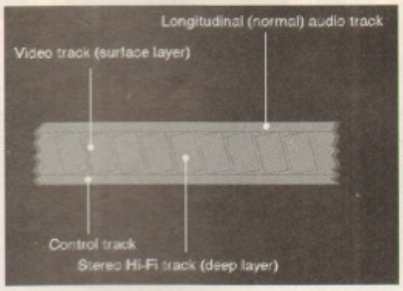
The camcorder microphone will record anything in range whilst it is recording. The sound will obviously be synchronised with the video image on the tape and everything will be perfect.

Unfortunately, the microphones are pretty good. Not only will they pick up any sounds from the scene that you are shooting, but more often than not the cameraman sniffing and mumbling about how cold it is. Even more disturbing, the camcorder mike usually picks up various mechanical noises from the recorder itself – the lens zooming, buttons being pressed, even the noise of the tape going around.

This isn't really the fault of the camcorder, but there is very little you can actually do about it. The best solution is to use another microphone.

This doesn't mean that you can't record the sound directly to the videotape, as a large number of camcorders have a socket for an external microphone.

SOUND



The sound track as it relates to the other information stored on tape.

A boom microphone is one of those long things that look a bit like a giant furry sausage. They are particularly useful for picking up background sound as well as the noise from any action that is being filmed. On the other hand directional microphones will only record sound from the particular region they are pointed at. They generally have a greater pickup range and are extremely useful for medium length shots where the microphone has to stay out of shot and still pick up action. For really localised recording lapel or radio mikes are the best, but they are expensive.

HI-FI SOUND

Most mid-range video recorders and camcorders now boast Hi-Fi stereo sound – have a look on pre-recorded tapes for the logo. Listening to a concert in stereo can really revitalise rather stale images.

The two tracks of high quality sound are actually recorded on the same piece of video tape as the picture. By use of cunning, the sound information is embedded beneath the surface of the tape, and so doesn't interfere with the video signal.

Stereo decks are very useful for recording NICAM broadcasts from off-air, as the quality is really quite exceptional. Also, many feature films have their sound tracks recorded in stereo or even full surround sound - with a suitable decoder you can watch Pink Floyd's The Wall and listen as the Stuka bomber from the opening scenes actually flies over your head.

All Hi-Fi equipped decks can use the 'normal' audio sound track as well. This is a mono audio signal and although far from CD quality, is fully compatible with all VHS machines, and can also be a life saver from an editing point of view.

USELESS

As the Hi-Fi sound is encoded into the video information, it can quickly become useless when several scenes are spliced together. As the view cuts from scene to scene - which may not have been recorded in chronological order - the sound track can quickly become an insoluble aural jigsaw puzzle.

As the sound quality from the Hi-Fi tracks are of exceptional quality, it is best to try to use them whenever possible. At a later date - known as post production – they can be remixed and dubbed it back in.

THE POWERS OF DUB

For a scene such as a figure walking down a street, the sound effects can actually be added afterwards. The 'audio dub' feature on most decks will allow new sounds to be recorded on the normal audio track. This track can be redone as many times as you like with no degradation in picture quality, as only the sound information is being re-recorded.

The noises can be the original sounds taped at the time, or some which you have created at home using a pair of old boots and a tray of cat litter. The BBC have produced many excellent sound effects records which you use to add interesting background noise such as traffic, farm animals or nuclear holocausts according to your need.

To add Hi-Fi stereo sound – for example, adding high quality stereo music to a pop video – there is no option but to duplicate the video to another deck, using the 'simultaneous broadcast' option to add the new sound track. With high quality systems such as S-VHS and 8mm, this extra generation will probably not be noticeable.

As far as the audio mixing equipment needed goes, it's possible to get by with the cheap mono only mixers which High Street stores such as Dixons stock. These mixers are perfect for recording voice overs onto tapes, for example an explanation as to exactly why Uncle Harry has an Easter Egg up each trouser leg.

However, if you want to remain in the stereo domain as much as possible, a proper mixing deck is called for. Quite cheap 'disco decks' are suitable, as are the 'home recording studio' orientated decks such as the Yamaha AM602, which permits up to six channels to be mixed and panned. Mixers such as these cost in the region of £150-200. A mono deck will suffice to start with, and will still prove useful if a move to stereo is made, as it's quite impossible to have too many inputs.

NARRATION

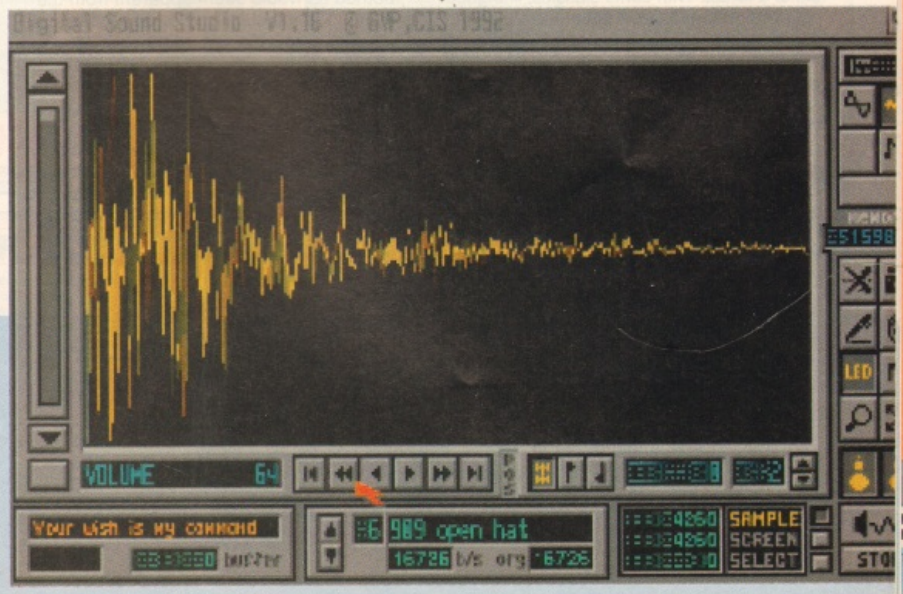
As the mono and stereo tracks are completely independent, they can be used for totally different purposes. For example, with clever use of audio dubbing facilities a mono spoken narration could be added to a hi-fi music sound track. Sometimes the twin tracks of the stereo sound are even used to carry voice-overs in different languages. Some Amiga based editing systems use the stereo tracks to carry time codes and permit frame accurate editing.

SMPTE

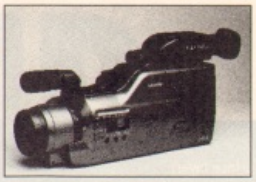
When music and video need to be integrated perfectly, professional time code systems such as SMPTE come into their own. With a suitably equipped MIDI system, the sound track can be completely locked to the video. Many Amiga MIDI sequencer packages can be expanded to make use of SMPTE interfaces.

MUSIC

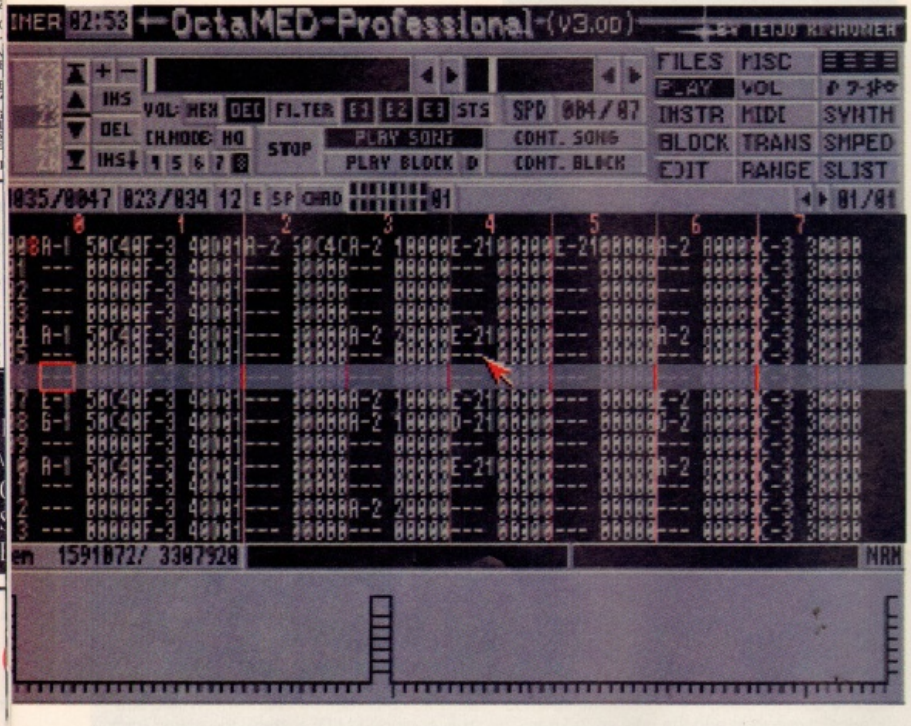
One of the things which can most alter your finished video is the addition of a soundtrack. Music very often sets the mood in a video and



Sampled sounds are great for spot effects as they can by triggered at the touch of a button, instead of having to cue in a tape.



Check to see what sound capability your camcorder has.



If you are feeling particularly brave you can sequence effects with an Amiga package such as Med, but it is a good idea to check the timings quite thoroughly, as tape speed can vary on different decks. Make sure that the deck you use to get the timings is the same as the one you use for the final audio dub.

without it horror films would not be horrible, comedies would not be as comic and dramas would be rather disappointing. Even basic presentations can benefit from a liberal dose of information on the audio tracks.

In fact with the right music you can completely alter the viewer's perception of what is going on. Take an example: a shot in the middle of a forest. With some classics, like good old Verdi wheeled out, it becomes a celebration of nature, all nice and beautiful. Switch to a few chords nicked from Hammer's House of Horror (only kidding Mr. Lawyer person), and it soon transforms itself into the stuff of nightmares.

Much music, like old classics, can be used (as long as the particular performance you are using isn't copyrighted) with impunity, but beware of using any popular music in your videos without obtaining the proper permission.

Many libraries and shops will stock copyright free CDs, which are essentially the same as PD software. Some sound effects can also be obtained in this way.

FOLEY EFFECTS

A Foley effect is one that is generated and dubbed onto the film at a later date. Often these effects are not generated by the same method as would seem apparent from the visual (e.g. the classic ruler on a table simulating an arrow striking a tree).

Foley artists have to train long and hard to be able to conjure up effects from seemingly nothing, but simple effects can be accomplished by almost anyone.

Adding sound effects in this way not only makes filming a lot easier but also allows you more time to get the effect the way you want it. No-one is going to do 36 takes of climbing up a wall just because you didn't quite get the right sound of their feet against the brickwork.

SOUND CHECKS

The recording of sound and dubbing onto video is really a subject that could fill another complete supplement. Try to experiment as much as you can with the equipment you have before using it in earnest. There is a best way to record sound, but it's a very expensive way – learn the limitations of the equipment you have and learn to avoid tricky situations, and bear in mind the following tips:

• Always make some sort of recording of the 'natural' sound when videotaping – even if it is very low quality it can be used as a guide as to what sounds to add in later.

• Remember that sound suffers a similar degradation in quality over successive generations as video. High frequencies are usually the first to suffer with the result that speech sounds mumbled.

• If your video must go through several post-production phases, don't rely on the soundtrack on the original tape. Jumps in sound are just as annoying as bad cuts in the film.

• When interviewing people or recording conversations always get the participants to record an extra couple of phrases (like "yes", "That's right", "certainly not", "the", "and" etc.) which can be used to join an edited soundtrack.

• If using Amiga samples as sound effects remember that they are only 8-bit samples. Always try to use samples generated at a decent rate.

• Don't expect sound and vision to match up perfectly from different tapes, even if they both originated on the same tape. There will always be some lead or lag in sound, so it's best to avoid too many areas when it becomes easy to notice that sound and picture don't match (e.g. close-ups of people talking).

• Editing cuts become less noticeable if sound and vision are not cut simultaneously. A few frames less or more sound can make all the difference.

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192 CPS 80 COLUMN

- Citizen Swift 9 - 9 pin - 80 column
- 192cps Draft, 48cps NLQ
- 8K Printer Buffer + 3 Fonts
- Parallel Interface
- Graphics Resolution: 240 x 240dpi
- Epson and IBM Emulation
- FREE Colour Kit
- FREE Silica Printer Starter Kit

RRP £239
COLOUR KIT £38
STARTER KIT £25
TOTAL VALUE: £302
SAVING: £143
SILICA PRICE: £159

£159 +VAT = £186.83 ref: PRI 2209

192 CPS 136 COLUMN

- Citizen Swift 9x - 9 pin - 136 column
- 192cps Draft, 48cps NLQ
- 8K Printer Buffer + 3 Fonts
- Parallel Interface
- Graphics Resolution: 240 x 240dpi
- Epson and IBM Emulation
- Colour Option Available
- FREE Silica Printer Starter Kit

RRP £329
STARTER KIT £25
TOTAL VALUE: £354
SAVING: £155
SILICA PRICE: £199

£199 +VAT = £233.83 ref: PRI 2309

24 PIN PRINTER

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RRP £339
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- Citizen Swift 200 - 24 pin - 80 column
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SILICA PRICE: £179

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192 CPS 136 COLUMN

- Citizen Swift 24x - 24 pin - 136 column
- 192cps Draft, 64cps NLQ
- 8K Printer Buffer + 4 Fonts
- Parallel Interface
- Graphics Resolution: 360 x 360dpi
- Epson, IBM and NEC P6 Emulation
- Colour Option Available
- FREE Silica Printer Starter Kit

RRP £489
SILICA STARTER KIT £25
TOTAL VALUE: £514
SAVING: £215
SILICA PRICE: £299

£299 +VAT = £351.33 ref: PRI 2574

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360 CPS 80 COLUMN

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- 360cps Draft, 120cps NLQ
- 50 Nozzle Head - Whisper Quiet 47dB(A)
- 8K Printer Buffer + 3 Fonts
- Optional HP Compatible Font cards
- Parallel Interface
- Graphics Resolution: 300x300dpi
- HP Deskjet plus emulation

RRP £496
TOTAL VALUE: £496
SAVING: £151
SILICA PRICE: £345

£345 +VAT = £405.38 ref: PRI 2090

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EDITING

Take three hundred miles of video tape, a nice tape deck and recorder and get cracking. With a bit of luck you might end up with about 30 seconds of footage.

Using a good deck is essential to producing videos of sufficient quality that other people can stand watching them. Jog-shuttles and other gimmicks are handy but not essential.

Many people think that editing is one of the largest creative processes behind any finished production. That may be, but the content of the film is not decided at this final stage, it should be decided before you even start shooting. The editing process actually begins before a single frame has been recorded.

PREPRODUCTION

Initially you will have an idea. And hopefully it'll be a good one good. But you need to work out how to express that idea in the medium in which you are working. No matter what your idea is you always know certain things about how it will be expressed.

Firstly, you should know what it is you want to say. If you are making a critical documentary, this may be fairly simple – you want to show all the facts to give a balanced argument for or against something, and maybe include a conclusion of your own or let the audience decide.

Maybe it is a training video, in which case you want to detail every part of a process, explaining as you go and building up to all the steps necessary to perform a certain task.

In a story, you will usually have a central character straining against some obstacle which stands between him and something he wants and the idea may be to highlight some moral dilemma or injustice.

Whatever it is you are planning, you should always know what the message is, and keep that in sight during the whole production.

You will also nearly always know the sort of people who will be watching it. This is very important because it may have an effect on the style you use to present your idea. Training videos normally work best with some element of comedy, to keep the viewer interested (because most people watching training videos are probably a captive audience). Think about what the audience are trying to get out of the video.

Another thing you usually know is how the video is going to be seen. Again this can affect the style. If you are shooting a promotional video for a shop for example, it will need to have lots of bright, attractive images and an interesting soundtrack to get peoples attention.

SCRIPTING

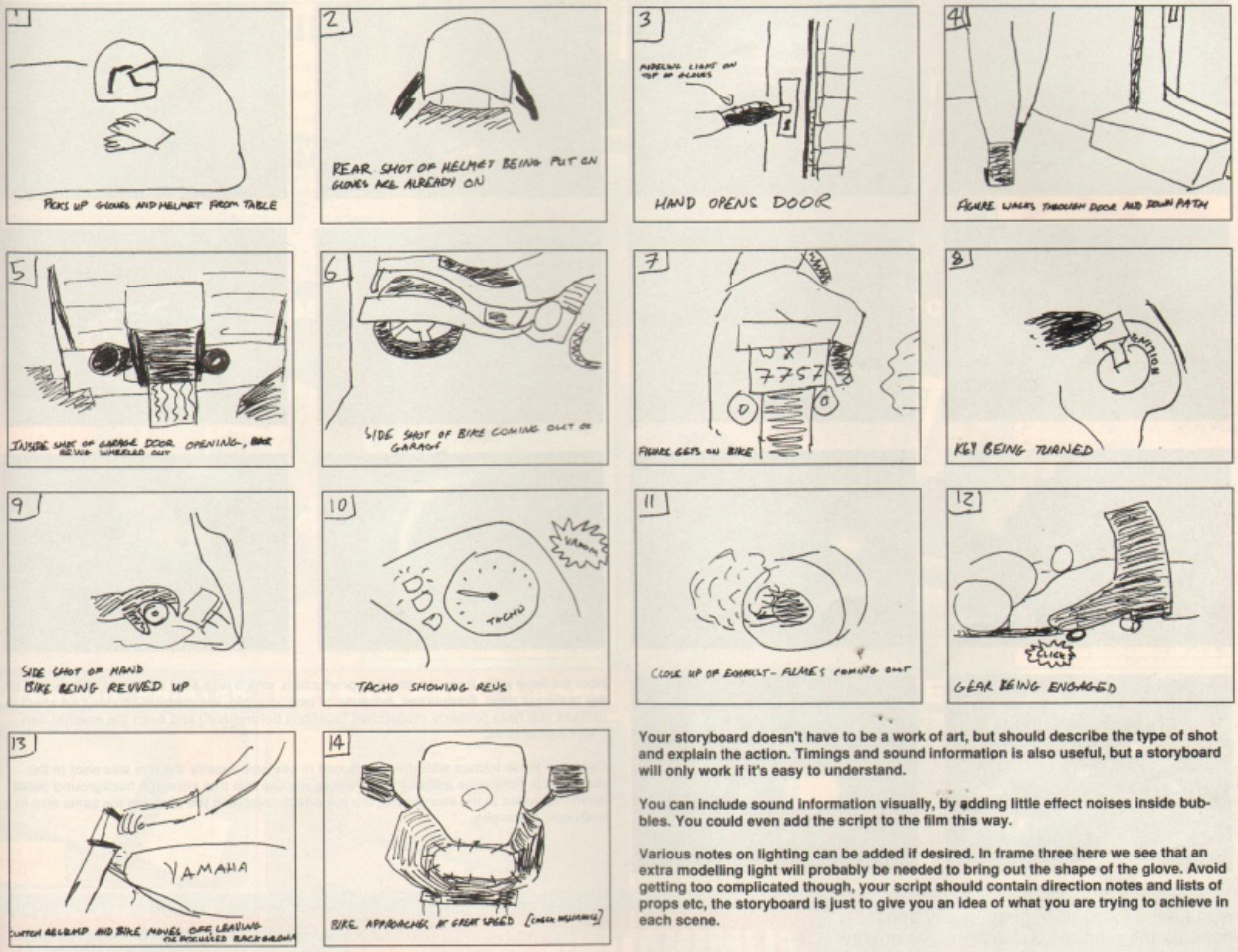
Once you have decided what it is you want to say, and how to say it, you need to decide what you have to shoot. This will initially take the form of an outline, just a few notes and a brief summary of the story.

This can then be broken down into scenes, and you may be able to give specific timings for them. Sometimes you can try scenes out before you do any filming. If there is a scene of an actor going down some stairs you could just time yourself going down the stairs to see how long the shot will take.

It is a good idea to get into the habit of working within a time frame rather than just adding bits on until the project is finished. In the real world TV directors have to work within very tight timing schedules. If you have to make a ten minute video it is a lot better working out scenes and subtracting values from the length of the video, than just adding on scenes until you reach ten minutes.

The next thing to do is produce a storyboard. It doesn't have to be elaborate, but it should give an idea of what the shots are going to

EDITING



Your storyboard doesn't have to be a work of art, but should describe the type of shot and explain the action. Timings and sound information is also useful, but a storyboard will only work if it's easy to understand.

You can include sound information visually, by adding little effect noises inside bubbles. You could even add the script to the film this way.

Various notes on lighting can be added if desired. In frame three here we see that an extra modelling light will probably be needed to bring out the shape of the glove. Avoid getting too complicated though, your script should contain direction notes and lists of props etc, the storyboard is just to give you an idea of what you are trying to achieve in each scene.

look like, the camera angles and the framing of the shot. Always number them and describe the scene underneath. The notes may be quite extensive if you are not going to be working all the cameras, so the man actually using the camcorder knows what he is supposed to shoot. When Ridley Scott had a storyboard made for Aliens it was done in the form of a huge comicbook.

The last thing you should do is work out a filming list. It may not be necessary to film all the scenes in chronological sequence.

FILMING

Armed with your script, shooting list and storyboard you now know exactly what you want to shoot. Things can still go wrong though. It's all very well filming exactly to plan, but what if, when everyone has gone home, you discover things have gone totally wrong on your production. It may be expensive or just not physically possible (in the case of a sporting event for example) to film everything again. Here are a few tips to minimise the potential damage.

• Always shoot plenty of tape. It's cheap, because you can re-use it. In some cases it may be worth trying to shoot everything possible (e.g. in sporting events when you don't know what is going to happen all the time).

• Use as many cameras as you have available. Again, in sporting events this is obvious, but it could be useful to have more than one camera (and cameraman) when shooting other types of video.

• Always have plenty of spare batteries and tape on hand. In cold weather tape can snap, and batteries die even if they have just been recharged.

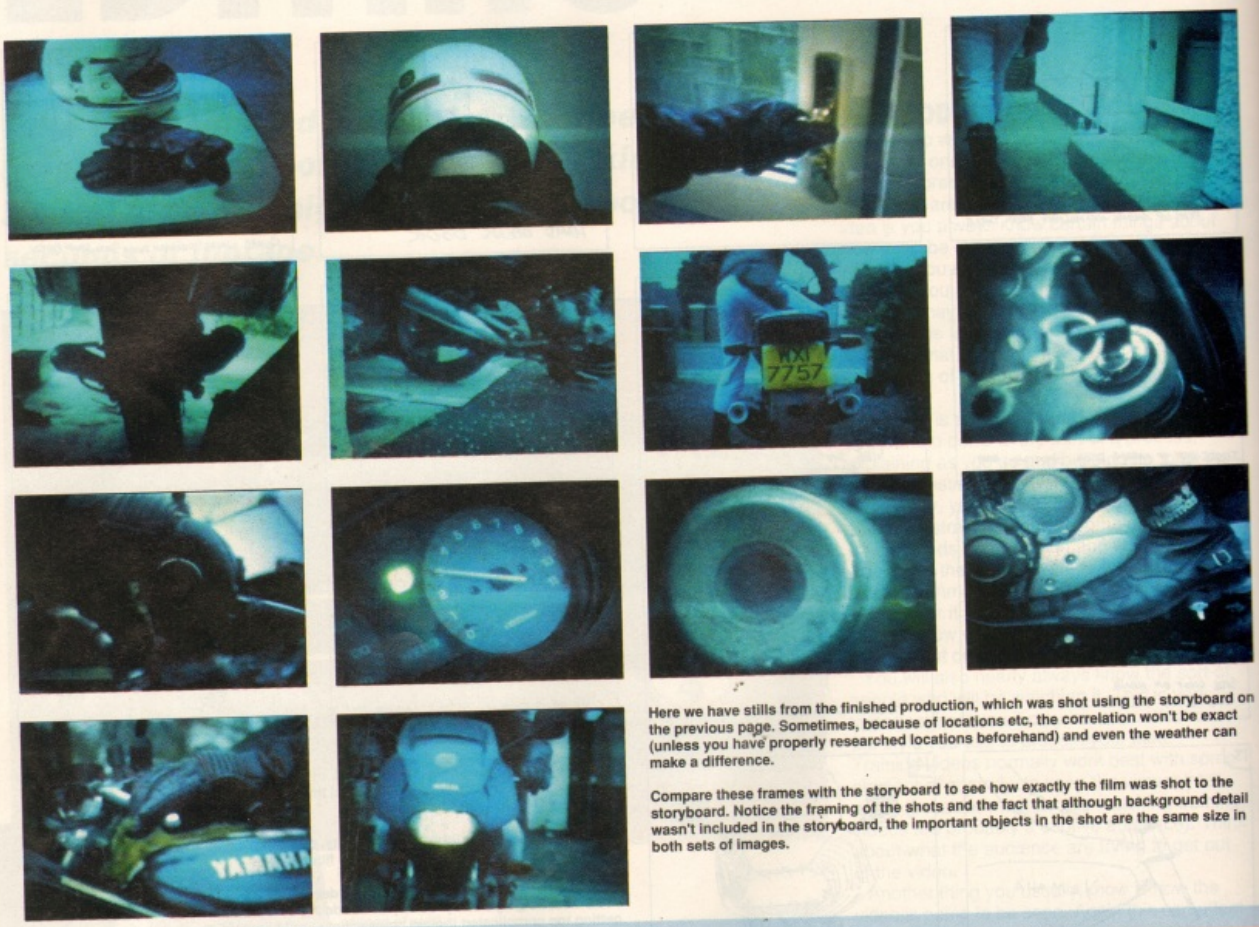
• When shooting multiple takes, just leave the camera running. It may use more tape, but there will be more space between shots to leave nice editing points.

• If you are not going to be using the audio track on one camera, you can do a voice over as you are filming, making notes which may be useful when it comes to the final edit.

POST PRODUCTION

Now you have miles and miles of tape you can go about putting the film together. Strictly speaking, there are elements of using the computer (like animation for example) which would be considered as part of production, but in a small desktop environment it doesn't really matter. At this stage, if you have not done so already, you can create your special effects or genlock titles over finished footage and so on.
To create the finished film you will need an edit decision list. This is rather like a script, but this time you will be specifying exact pieces of video that you will be using, not footage that you are planning to get.

In productions like wedding videos, this may be where most of the creative decisions are made, since you only know vaguely what you are going to get before you start filming. After doing a few edits manually you will begin to understand why so many people use edit controllers (like Editman and Video Director on the Amiga(. Usually audio is left until last. It usually



Here we have stills from the finished production, which was shot using the storyboard on the previous page. Sometimes, because of locations etc, the correlation won't be exact (unless you have properly researched locations beforehand) and even the weather can make a difference.

Compare these frames with the storyboard to see how exactly the film was shot to the storyboard. Notice the framing of the shots and the fact that although background detail wasn't included in the storyboard, the important objects in the shot are the same size in both sets of images.

won't have to go through as many generations as the pictures, so to preserve quality it can be put on at the final stage.

The simplest method for audio dubbing is to time the edited film very carefully finding all the "start tape", "tape in" and "tape out" points. Then start the dubbing VCR and use an audio mixer to bring the tape in and out at the right time. A backing track can be running through the mixer all the time, with just the voice overs and effects coming in from tape.

It is usually easier to break this task up and do it in small sections at a time, but it is still just as complicated as editing the video images (if not more so).

The one thing to remember above all is that the production will be judged on the final tape, not on the way in which you put it together. Plan your editing the way you feel comfortable with it and around the equipment you have.

ELIMINATING GLISTCHES

Glitches occur when an assemble edit is made on equipment not fitted with flying erase heads. The glitch will appear to scroll down the screen, because the video information is stored diagonally on the tape. This means that the glitch actually lasts for a few seconds rather than just a blip in a couple of frames.

The only way to eliminate this is to use flying erase heads on your master deck. They can control the part of the tape which is erased at the edit point, leaving you glitchless. Some heads can also control the end point of the erasing process which means that you can perform what are known as insert edits.

Whatever equipment you use it is worthwhile reviewing every edit after you have made it to make sure everything is perfect. You don't want to find there is an error in the title sequence halfway through a 20 minute production.

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- Standard Semi Auto Sheet Feeder
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+VAT = £217.38 Ref: PRI 8015

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CASE STUDY

It's all very well talking about the Amiga's potential in Desktop Video, but does anyone actually use it? Yes they do, and here to prove it is a mini-profile of Amiga enthusiasts New Concept Productions with a special chance to get a free 55 minute instructional Amiga video (you pay only P&P).

DECKS, FLIES AND VIDEOTAPE

The concept behind New Concept came about when a company which had been successful in catering to the fly-fishing industry decided that it would be a nice idea to add an instructional video to their range of products. After investigating the possibilities it became apparent that the cost of having an independent production company produce such a video was more expensive than setting up a small studio to do the job themselves.

Obviously one of the first pieces of equipment to be included in the set-up was an Amiga, and soon it was forming part of a full broadcast quality studio and helping to build up the largest collection of specialist videos in Europe (marketed through the Burgess Video Group).

The Amiga is not limited strictly to titling work, although that is where it excells most. Many animated excerpts from tutorial videos have been created using the animation power of the Amiga in conjunction with a digitiser. Even images rendered in *Real 3D* have found their way onto the screen in a Fly Fishing video.

Much of the work is carried out by more expensive equipment though. Three M2 decks provide frame accuracy and component quality for the production of clean, clear and glitch free videos. Effects are generated by a state of the art touch screen DVE (Digital Video Effects) unit. Sound is dubbed on using an eight track mixer and drawing on an extensive selection of pre-recorded music and CDs.

This is not the end of the Amiga's involvement though. When the videos are finally finished There is still the artwork for the box to be done. All the covers for Burgess Video's tapes are produced by scanning images into an Amiga and incorporating them with the relevant text with an Amiga DTP program.

The high quality proofs are supplied by a Canon colour laser copier which, with its built in PostScript engine, is driven directly by the Amiga. When the proofs have been checked and corrected, the Amiga then produces Macintosh format disks to be taken to an output bureau, where the final film is produced.

The centre of New Concept's video studio, with the Amiga kept handy on one side.

Titles are genlocked on using one of the professional G2 Systems' units.

Sound is added via an 8-channel mixing desk. Note the DVE unit to the right.

THE AMIGA VIDEO COLLECTION

HISTORY OF THE AMIGA (45 minutes)

An entriguing and entertaining look at the origins of the Amiga computer. Listen to initial trials and tribulations which Jay Miner and the rest of the original Los Gatos gang went through.

ANIMATION VOLUME I (48Minutes)

The Original Amiga World Animation Video that will fascinate, entertain and inspire viwers as it demonstrates the amazing capabilities of Amiga animation.

ANIMATION VOL II (90 MINUTES)

Exciting, innovative animations using such programs as Lightwave 3D, Imagine, Sculpt 4D and Deluxe Paint III. You'll be thouroughly entertained by these animated stories.

HOW TO ANIMATE (45 MINUTES)

Relevant to novices and intermediate users alike, pick up helpful tips and techniques on using *Deluxe Paint IV* from Joel Hagen. Also includes tips on *Lightwave 3D*.

THE DELUXE PAINT IV VIDEO GUIDE

Takes you on a guided tour through *Deluxe Paint IV*'s features – learn how to use metamorphosis, the light table and more. This video teaches you the basics of *Deluxe Paint*'s tools and is ideal for beginners, altthough even experienced users may learn a thing or two.

ADVANCED TECHNIQUES WITH DELUXE PAINT IV

Learn tips and tricks for combining *DPaint*'s different tools for spectacular effects with professional results. This video is a must for all *DPaint* users.

BENNY THE BEAR (30 MINUTES)

A full half-hour cartoon for children entirely produced on the Amiga. Let your children enjoy the cartoons as you enjoy the animation techniques.

ANIMATION 101 (60 MINUTES)

Part 1 – many exciting animations are incorporated into this introduction to the Amiga system - it will slingshot your imagination in all directions.

Part 2 – How those exciting animations were made along with tips on video production and editing. All animations are recorded in real-time using only the basic computer and software.

HOW TO SHOOT VIDEOS

KNOW YOUR CAMCORDER AND FUNDAMENTALS (90 MINUTES)

How to buy the camcorder and accessories that are right for you. Don't be conned into buying a more expensive model, just for the sake of marketing hype. Use your Camcorder to its fullest advantage and discover hidden talents.

HOW TO SHOOT VIDEO LIKE A PRO (90 MINUTES)

Learn the fundamentals of composition. Bonus! How to transfer your slides/home movies to video.

CONTINUITY AND COMBINING SHOTS (90 MINUTES)

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See ASDG's *Morph Plus* and Black Belt's *Image Master* in action
See *Deluxe Paint IV* used in a video production
See Bump mapping effects created in Real 3D
See the speed increase given by 68030 and 68040 processors

DESKTOP PUBLISHING

See DTP software in professional use.
See the new *Art Expression* software from Soft-Logik.
See *Art Department Professional* in use, scanning and processing images.See Full colour publishing on the Amiga, using peripherals such as a Sharp JX scanner and a 24-bit full colour laser printer.

VIDEO

See what 24-bit graphics look like in action, on the screen.
See videos being professionally produced using the Amiga in conjunction with genlocks and other equipment.
See the Amiga in action in a FULL BROADCAST QUALITY studio

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THE STUDIO

It's all very well having lots of nice video equipment and an Amiga but it's all made or lost on how you put it together.

Editman installed in a medium sized studio.

We've already seen how important it is to preserve the integrity of your video signal, and reduce the number of generations of tape you have to produce. Just because you have the right source and editing equipment doesn't mean everything is going to be alright.

How your hardware is linked up and the way in which you edit your finished video together can have a great effect on the end result. You can of course edit the video together entirely manually, and if you are just doing a birthday party or family interest event then their is nothing wrong with this approach.

When it comes to more complicated efforts, like shooting a wedding or a sporting event, things become slightly more tedious, especially since the footage will be spread over several tapes.

One company based in Derby has addressed this problem by creating a device which enables the computer to take control of the editing process.

TIMECODES

Editman is very accurate. Because its internal clocks measure to the frame counts generated by the video decks, it is not necessary to use timecode information. The system gives about a three frame accuracy, which is all that can be guaranteed by most video decks anyway. Short of using digital equipment you are not going to be able to get much more accurate.

Because of the way the video decks are controlled, only ones supporting the LANC (Sony) and Panasonic (5-pin) standards can be used. These decks are not necessarily very expensive, but remember that you are going to need at least two of them.

Some editing solutions (like Gold Disk's Video Director) use an infrared device to enable them to control other decks, but this cannot be guaranteed to work to any degree of accuracy (although it's a very fair effort for people who are not too fussy).

THE SOFTWARE

The software controlling the editing process is both complex and yet very intuitive and easy to use. The edit points are set by simply activating a button at the correct part of the tape, both for the in point and the out point of the edit. The software intelligently calculates the length of the clip and displays the run-time in a separate timer.

All this information is also stored in the form of an edit decision list, which is like a script of all the edits which are to be made.

Editman also runs on the PC, and looks identical. The idea is to create platform independant software.

When edits have been defined they can all be activated by choosing the assemble option.

The software will then control the tape decks, scanning through to the various edit points. The controls will automatically perform a short run-in on the source deck to allow the unit to get up to speed. There is an optional review mode that will show every edit as it appears on the destination tape.

As well as controlling a tape deck, you can also use Editman to display Amiga graphics at appropriate points.

THE HARDWARE

Editman super is an update on the old Editman system. The super model now supports S-VHS for higher quality results. Although this is far from being broadcast quality, it is more than adequate for domestic and semi-professional use. If you don't have S-VHS equipment, composite is still catered for. A 'send' port is also included, which allows you to optionally pass the video through a genlock (or in fact any other video effects equipment). Editman will be supporting software driven genlocks in the future as well as many other pieces of video hardware. The intention is that hardware add-ons which control wiping, effects and so on will all be software controlled to eliminate totally the need for the user to be present during the actual assembly

THE CONCEPT

The whole idea of designing the series of devices from a video point of view, and also designing top-down from the model with the most features to the simplest unit, Syntronix have succeeded in catering for almost everyone from the video enthusiast who wishes to use computers to the Amiga owner who wants to do something more productive with his camcorder.

The Editman system is not necessarily a new way of looking at DTV, it's just more a methodical approach. Yet it simultaneously manages to combine emergent technology in the video field within a carefully constructed logical and easy to use framework.

THE RESULT

This is the sort of editing suite which is bound to become more prevalent in both the semi-professional and enthusiast markets. By using the computer as more than just a glorified caption generator, this unit and others like it integrate the Amiga into the heart of the video production system rather than just using it for the odd effect.

STUDIO

For more information on the Editman range of peripherals and also details of other emergent technology in the video field, contact Syntronix on 0332 298422.

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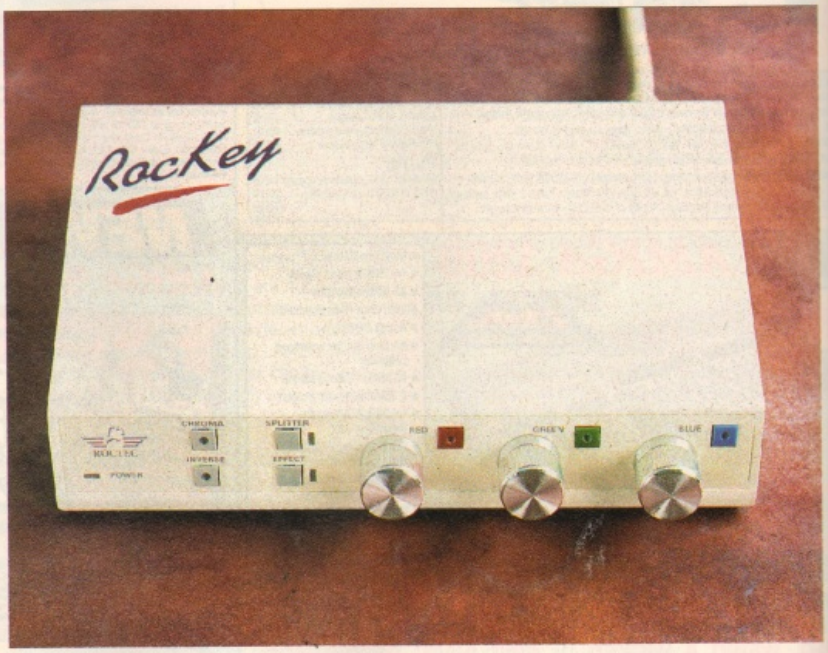
SPECIAL EFFECTS

Not happy with your video? Need to add that certain something – such as a fifty foot high gorilla eating biplanes? Or are you looking for a cheap and cheerful way to produce a pop video? Or maybe a Doctor Who rip-off (but where would you get all that cardboard from?).



A Chromakey unit like this one is invaluable in producing a vast range of effects.

There was a stage when all films were judged by the punters by how many novel effects were used in them. A well thought out ordinary effect can be just as effective (pun? what pun?) as a jolly expensive one, so do not despair. Here are a few techniques that everyone should know how to use.

GENLOCKING EFFECTS

Genlocking can provide some good effects with very little effort, although some imagination is required to make the most of them. Drawing silly beards can become repetitive, so here are a few suggestions.

MOVE HOUSE

If your genlock has a positional wipe, use perfectly horizontal horizons and add new backgrounds by superimposing a Vista generated backdrop.

SPACE CADET

Draw a spaceship orbiting a planet using *Deluxe Paint*. Make sure that you do not use colour 0 as the sky colour. Fill a window in the spaceship with colour 0, and then line up the video camera to provide a picture of yourself very far away. When the camera is positioned so that you are beneath the window section and the scene genlocked, it will appear as though you are flying the ship.

BANG!

Disintegrate your friends with this handy household hint. First video your victim walking into a detailed room and then standing still directly in front of the camera. Stop the camera and ask them to move out of shot. Without moving the camera, re-start filming the scene

Now it doesn't matter what jumper granny knitted you for Christmas, you can just key over it.

SPECIAL EFFECTS

Add new horizons with a genlock or chromakey.

You have to set levels correctly to avoid the tell-tale keying fringe.

with them not present for a minute or so. Next digitise the scene with them in it, and with *Deluxe Paint* cut them out. Clear the screen to colour 0, and create an animation using only their image, causing it to explode into fragments. When the animation and disappearing act footage are genlocked together, your ex-friend will seem to explode and vanish completely.

KEYING EFFECTS

A chromakey can be used to provide all sorts of weird and wonderful effects. By adjusting the colour selectors, any colour you like can become transparent and replaced with computer graphics. When the thresholding is badly set, parts of the image seemingly at random are affected.

• By having someone wear a jumper which is pure blue, you can have them walk around a scene with the chromakey providing their jumper. This can be particularly effective if you key in a weird and psychedelic image – you could even animate it

• Sucked into Computerworld. Instead of generating a backdrop on your Amiga, why not key someone into an application program, or even Workbench!

CAMCORDER EFFECTS

There are a lot of effects you can create just using a camcorder, and we don't just mean those silly modes that come built-in to them.

• Simulated dissolve. If you do not have any units which can dissolve from one image to another, you can always create the effect on a camcorder. Swap to manual focus and quickly defocus the shot. Pause the recorder, move to the next scene, start recording defocused again before engaging the autofocus. It only woks effectively when the backgrounds are similar, but it's a useful trick.

FRAME BY FRAME ANIMATION

Animation is possible with most new camcorders. Set the camera on a tripod and select animation mode. Focus on a well-lit table and disengage auto-focus. Now move small objects around, pressing the camera operate button after each movement. After an hour or so, you will have created about 10 seconds of stop frame animation.

Some expensive video recorders will actually create single frame animation (well, accurate to about 3 frames anyway). This could be used in the same ways as above, or with an Amiga with a 24-bit framestore to produce some photo-realistic animation sequences.

• Buster Keaton's car. There is always the old favourite (using one of the above animation techniques) of animating someone apparently driving along the road at 40mph without a car. You need a calm day for this and someone very stupid ('It's like this Jon...') to pretend to sit in a car in the middle of the road.

• Feedback horror. By a combination of pointing your camcorder at a monitor that's relaying its image and fiddling around with the controls you can get some quite breathtaking effects. Adjusting the zoom will enable you to find interference points where suddenly everything appears to be in perfect focus with lots of weird lines coming 'towards' the viewer. When used in conjunction with genlocks and keying units they can provide surreal backdrops or foregrounds for your space adventures. Gene Roddenberry would have been proud.

By playing with the threshold on the Rockey you can create bizarre Top of the Pops-type images.

• Deliberate degeneration. By recording to about six or seven generations on your equipment you can create some very strange effects indeed. Unfortunately it is a little hard to predict exactly what will happen, but it usually goes along the lines of everything becoming fuzzy, the colour balance taking a dive toward red or blue, static like effects and the occasional glitch. Very handy for simulating TV reception in Wales.

DIGITIZER EFFECTS

Digitizers can be very useful in DTV, not least because you can digitise any frame of your video, muck around with it and then send it back to tape. Essentially they can be used as an off-line DVE unit. In combination with a genlock you can create those shrinking wipes between two moving images that you've always wanted to.

• Rotoscoping. From the dawn of something or other animators have been cheating. By digitising, or in the old days just making prints from, successive frames of a real world image and using these as the basis for an animated drawing, it is a lot easier to create a realistic animation. Ask Paramount Pictures and the guys behind Cool World.

With a combination key and wipe you can simulate many DVEs such as the classic universe disappear ing into the space between the ears.

GLOSSARY

There's probably more confusing jargon in the world of video than there is in any field of computing. Don't get caught out, get caught up with the amazing CU glossary.

8mm
More and more camcorders are boasting '8mm' on their little stickers these days. What is it? 8mm is simply a new standard of video, similar to but incompatible with VHS, which provides higher quality pictures with lighter, simpler and therefore cheaper hardware. You can buy 8mm video recorders as well as camcorders, but this isn't necessary to watch your 8mm videos, as the composite video information can be relayed by cable to the SCART socket of any video recorder, no matter what system it uses.

Amiga
The best DTV computer there is, bar none. The excellent quality of its graphics, and the large amount of hardware and software available lifts it head and shoulders above any opposition.

Chromakey
It is possible to combine two video signals in such a way that one, and only one, colour of the first signal is replaced by the second. This is known as 'chromakeying'.

Chrominance
The colour information part of a signal. Usually the RGB information is encoded and combined using a terribly mathematical technique known as quadrature mixing.

Composite
If you're an American, you'll say 'com-pos-it', otherwise it's 'comp-o-sit'. Either way, a composite video signal combines both the Chrominance and luminance information into one video signal. It's handy, but also prone to colour crosstalk.

Crosstalk
If you encode colour and brightness video information and pipe them down the same cable the signals will interfere with each other. Typically this can look like a shimmering effect over large areas of colour, or weird black and white lines over a stripy shirt. This effect is removed with Y/C systems, such as S-VHS or Hi8.

Deck
Slang for video recorder/player.

Dub
The recording of a video/audio track from one deck to another.

Edit
Combining several shots together is known as editing. You can perform simple editing by using the pause key on your video recorder. If you invest your money in expensive editing suites, you'll get to play with all sorts of fun faders and jog shuttle devices.

Flying erase head
Fitted to more up-market video recorders, this special video head can write to the video tape frame by frame and avoid any nasty glitches between edits.

Generation
the number of times removed from the original the present copy is. As quality is lost over successive generations, it is important to keep the total number as low as possible.

Genlock
A hardware device which can overlay computer graphics onto video images, just like the ITV Chart Show.

Head
The part of a video recorder that reads and writes the video information to tape.

Hi8
The near pro-level version of 8mm, which like S-VHS stores Luminance and Chrominance signals separately.

HiFi
Newer video-recorders come with HiFi sound, and if you connect the video to your music centre you discover why. With HiFi sound, near CD quality sound is stored on the video tape in full stereo and sometimes full surround-sound. Perfect for music videos.

HQ
High Quality. When the video recorder manufacturers wanted us all to rush out and buy new decks, they improved things slightly and added little 'HQ' stickers to the front of the recorders. Virtually unavoidable these days.

Jog shuttle
A knob on expensive decks which can be spun to find video frames accurately and quickly. The latest gimmick to come to home systems.

Keying
When you mix two video signals, you are keying them together. This is actually quite a tricky business, as the signals need to be synchronised perfectly with special hardware.

Luminance
The lightness and darkness components of a video signal. If you connected a luminance signal to a colour monitor, you would see a black and white picture.

Modulator
A device which can convert composite or Y/C video information into RF signals, typically for display on a colour television.

Monitor
Like a TV, but with all the RF and tuning components removed. The picture quality of a monitor is generally much better than on a TV, but a monitor costs considerably more.

NTSC
Never Twice the Same Colour. OK then, National Television Standards Committee – the Yanks' idea of a video system. It isn't as good as PAL, and it's completely incompatible as it runs at a different frame rate (60Hz).

PAL
Phase Alternate Line – the Brits' version of a video standard. Slightly higher quality than NTSC, and a slower frame rate (50Hz).

RGB
Red-Green-Blue. An RGB signal contains the video information split into its colour components. Typically used by computer monitors for a crisp display.

RF
Radio frequency. When a video recorder wants to display a picture on your TV, it pretends to be a very low power television station, and actually broadcasts the signal (with sound included) into the aerial socket of the TV. If you can replace this set-up by directly linking the TV and video with SCART leads you will get a much, much better picture.

SCART
Also known as 'Peritel', the SCART socket is a standard connector that bundles all the audio and video signals known to man into one nasty big brute of a connector that's impossible to solder.

SVHS
The 'S' stands for Super or possibly Separate. An SVHS deck uses the same style of cassettes as a standard VHS machine, but has the option of recording the Chrominance and Luminance information separately. Tapes recorded in this are of a much higher quality (no colour cross-talk), but cannot be played back on VHS-only machines.

SVHS-C
The 'c' means compact - the video cassettes have been shrunk to near music cassette size to fit into a camcorder. Special adapters are available which allow the small tapes to be played back in standard recorders.

VHS
Video Home Standard, after winning the VHS/Betamax wars it became the most common video format in the world. Pretty crap really.

VHS-C
Like VHS, but 'compact' with small cassettes for camcorders. VHS-C tapes are usually quite short in comparison to 8mm tapes. By means of an adapter, the cassettes can be played back on full-size machines.

Y/C
Another way of describing a split Chrominance/Luminance video signal.

Zardoz
An excellent film with Sean Connery and Charlotte Rampling. It is probably out on video.

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